TECHNOLOGY REVIEW

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Roland's Hi-Fi Express FP-740 Sublimation and SOLJET PRO III XC-540 Eco-Solvent Inkjet Printers

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Roland's technology for every vision

We can unequivocally say Roland DG has a nose for business. Even though its product offering is quite expansive, the company continually adds products by finding a need and filling it.

We were recently privileged to visit Roland's Irvine, CA, office and, wow, what a treat. Clearly, their expertise doesn't stop at well-engineered printers; we learned they truly understand the importance of their knowledgeable users. As we toured the complex, we sensed it wasn't just about the printers – the whole experience was designed around Roland's users and what they could achieve.

All Roland customers may tap into Roland University, a well-rounded training facility staffed with signmaking-technology experts. Company scientists and technicians continually test new substrates and techniques. Further, its people work side by side with sign-industry professionals. Roland wants its users to be successful, and it knows knowledge means power.

Roland's new printers fit neatly into the product mix. We were bombarded with their first-rate training materials, which really helped us understand two products: the HI-FI Express FP-740 sublimation inkjet printer and the Soljet Pro III XC-540 inkjet printer/cutter.

FP-740

XC-540

Hi-Fi Express FP-740

The Hi-Fi Express FP-740, based on sublimation-ink technology, caters to the flag, banner and textile markets. Sublimation inks, when heated and pressure transferred, uniquely bond on such polycoated surfaces as fabrics, ceramics, wood, plastic and glass. The inks penetrate the surface to create a tattoo-like transfer, similar to a decal, without the feel.

When applied to fabric, dye sublimation is amazingly soft to the touch. Consequently, textiles and banner materials retain their drape and texture after printing. The paper size is 74 in., with a maximum 73.6-in. print width.

The FP-740 utilizes the eight piezo, four-color (CMYK) inkjet printhead technology with an amazingly fast

print speed of 548 sq. ft./hr. at its 270 x 360-dpi mode. The FP-740 also supports print speeds and image resolutions ranging up to its high-quality, 720 x 720-dpi mode. It uses two sets of four CMYK, Heatwave sublimation, extended-ink 220cc cartridges.

Fig. 1. The Roland FP-740 creates graphics for flags, banners and other soft-signage applications, including an array of interior applications, as shown here in this vehicle.

Fig. 2. Roland has added numerous engineering upgrades to the XC-540. The control panel, shown here, is now cantilevered for easy viewing, and the streamlined menu information facilitates access to specific information.

The onboard interface, Ethernet 10 Base-T/100 Base-TX (automatic switching), connects to office/shop networks. Energy Star compliant, it utilizes its automatic sleep feature. The printer weighs, stand included, 589 lbs. and measures (with stand) 139⅜ in. wide x 29⅞ in. deep x 51½ in. high. Like other Roland products, this printer comes bundled with the company's VersaWorks professional RIP software.

The FP-740 comes standard with the redesigned, extended ink-delivery system that uses custom-formulated, clog-free sublimation inks. This system can accommodate more than 3520ml of usable ink for increased productivity and unattended production printing. The Heatwave sublimation inks, in 220ml cartridges that feed 16-intermediate reservoirs, can be swapped on the fly, without pausing the printer during production. Other sublimation-ink systems tend to clog, unless cleaned frequently.

Because of its systems and vibrant color gamut, the FP-740 offers superb print quality. Further, the image lifetime is unrivaled by direct printing or traditional heat-transfer methods.

As we said earlier, many high-volume sublimation printers require frequent maintenance. Roland took an ease-of-use approach by incorporating an advanced-maintenance

system that monitors the printer and automatically cycles routine ink-system maintenance. This reduces manual cleaning of the head and capping stations to twice a month. Also, the printer can remain unattended for extended periods of time without experiencing head clog or ink caking.

The FP-740 includes a front-mounted, media take-up system that high-speed production environment requires for continued unattended printing. The media take-up's sensor guides keep the media slack at a constant rate. The numerous resolution and print-speed combinations eliminate the guesswork.

During our visit, we reviewed many different samples produced from the Express FP-740 heat-transfer processes: T-shirts, awards, flags and banners. The brilliant colors (**Fig. 1**) literally tattooed to the final substrate.

SOLJET PRO III XC-540
While visiting, we also reviewed the XC-540 printer/cutter. Roland engineering upgrades have produced faster print speeds without compromising the color quality. The company has also increased the printer's ink capacity, included an optical-registration system for accurate cutting, added an advanced media-handling system and included an accelerated drying system, among other

upgrades that we'll discuss in a minute. "Feature rich" has achieved new meaning.

The name Soljet correctly infers the ink is an eco-friendly, solvent-based solution that's rated as UV, fade and water resistant for up to three years, without lamination. Unlike a solvent-based ink, the XC-540's advanced, Eco-Sol Max ink doesn't emit a noticeable odor. Its wider color gamut creates a more vibrant image, more scratch-resistance properties and a broader, uncoated media-materials list. Last, but not least, the cost per copy is lower. Take a look at the price list – this printer is very affordable.

The Soljet Pro III XC-540 54-in. eco-solvent inkjet printer/cutter's 441-sq.-ft./hr. maximum print speed makes it perfect for high-volume indoor or outdoor banners, signs, vehicle wraps and decals. Roland's piezo-inkjet technology, a six-color (CMYKLcLm) ink set and friction-fed mechanism ensure a reliable media path. The maximum printing resolution is 1,440 x 1,440 dpi, with many combinations ranging down to 360 x 360 dpi. The cutting speed is 11.8 in./sec., and the downward blade force adjusts from 30 to 300 grams.

The XC-540 has an onboard Ethernet 10 Base-T/100 Base-TX automatic, switching interface, and its automatic sleep feature makes it Energy Star compliant. It weighs

338 lbs., and the overall dimensions, with stand, are 106.12 in. wide x 41.93 in. deep x 49.62 in. high. It comes bundled with Roland's VersaWorks software RIP.

We'll highlight a few model changes. The control panel (**Fig. 2**) is now cantilevered for easy viewing. Also, the streamlined menu information facilitates access to specific information, i.e., the service station when the front is opened. The media take-up system now allows larger, weighted rolls (up to 66 lbs.) for long-run, unattended printing. Roland also upgraded the pinch rollers, which improve the media-travel accuracy. To further insure accurate tracking, Roland designed a new vacuum platen, and selectable head heights have been added, to assist lighter media types.

The XC-540's unique Precision Firing Pattern lets the printer travel at higher speeds without sacrificing ink applications, which retains vibrant colors at higher speeds. Additionally, the onboard heating system's pre-heater now warms the media prior to printing, which makes it more ink receptive. The post-print heater accelerates the ink's adhesion to the media, and a dryer (**Fig. 3**) accelerates that process before the media moves onto the take-up system.

Additionally, an optional drying system, listed as the DU-540, includes a dryer and blower that accelerates the drying process even more. Designed specifically for the XC-540, it's simple to install. Roland recommends this system specifically for the higher print speeds and/or exceptionally saturated images. DU-540's price is listed at $2,995.

Print/cut devices, although not new to the digital world, uniquely relate to signmakers. In most cases, they're primarily printers or cutters. Integrating the processes into one machine eliminates removing the

printed material and then, on a separate machine, contour cutting around the printed image (labels, decals and pop-outs, for example). This alleviates re-registration issues – if lamination isn't required. Roland says the final image is rated for three years outdoors, without lamination.

Print/cut technology demands more technical effort. For instance, to contour cut around a graphic, you specifically identify that outline. For the RIP to identify a cut path instead of a printed outline, you must select a spot color specifically for that line, which must be vector based, meaning, you set up the artwork with print data and cut paths before it gets sent to the RIP for processing.

For the colors to bleed off the image's edge, add a point or two to the outside of your image. This eliminates leftover white space. This can be tricky, but Roland understands that users need the basic and complex workflows of print/cut production, and provides an easy-to-read, full-color booklet: "Taking the Mystery Out of Print/Cut." For more intense training, you can sign up for a workshop in the state-of-the-art training facility.

The VersaWorks software RIP 2.2 – bundled with both the printers reviewed here – features a spot-color library, spot-color replacement and clipping, and auto-nesting. VersaWorks features an efficient, graphical-user interface (GUI), advanced color-management tools and various convenient layouts,

edits and print functions, such as tiling and auto/manual-layout. The easy-to-understand software supports many program formats: an on-screen job preview and a two-job queue for handling different print conditions. VersaWorks updates and ICC profile downloads are available online (there are many). The Adobe PostSript® CPSI ™ RIP engine is compatible with Windows 2000/XP operating systems.

Last, but not least, we should mention the huge list of Soljet-supported media. The media swatch book, which nearly requires a cart to carry home, lists banner materials, adhesive-backed vinyl, view-through vinyl, paper, film, fine-art materials and overlaminate film. The list goes on. Also, Roland's supply group continually investigates, and then shares, what signmakers are doing.

Both the Hi-Fi Express FP-740 sublimation inkjet printer and the Soljet PRO III XC-540 eco-solvent inkjet printer/cutter are key advancements in Roland's product line. The sublimation printer is directly positioned at the production flag, banner, textile, award and soft-sign arena, while the eco-solvent printer is positioned at the production-level indoor/outdoor banner, sign, vehicle, decal and display markets. Both are built rock-solid to endure high-level production.

If you wish to "keep up the pace," please take a look at Roland's advancements in products and support.

Roland Color

HOW DO YOUR CUSTOMERS SEE "RED?"

"Tomatoey...like just before it becomes overripe."

"I'd say candy apple red, but darker."

"The color of my first car... a cherry GTO."

"Cyan 0. Magenta 100. Yellow 100. Black 0."

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WITH ROLAND COLOR, SPOT COLOR MATCHING ISN'T A TARGET...IT'S A PROMISE.

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ROLAND COLOR IS INCLUDED WITH ROLAND PRINTER & PRINTER/CUTTER WITH VERSAWORKS 2.2 RIP

VERSACAMM SP	VERSACAMM VP	PRO III XC-540	SOLJET SJ SERIES	FP-740	ADVANCED JET AJ-1000
30 & 54" PRINTER/CUTTERS	30 & 54" PRINTER/CUTTERS	54" PRINTER/CUTTER	64", 74" AND 104" PRINTERS	74" SUBLIMATION PRINTER	104" PRINTER

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